

Improving institutional report card indicators

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ABSTRACT

Institutional report cards are increasingly being used by higher educational institutions to present academic outcomes to external audiences of prospective students and parents, as well as program and institutional evaluators. While some prospective students are served by national transparency measures most users mine information from the institutional web site, so even institutions at the bottom of the comparison spectrum need to manage their information dissemination to fulfill audience needs. An analysis of the Web-published institutional report cards and transparency reports of a representative sample, stratified by institutional type and geographic location, of 82 American higher educational institutions yielded results which influenced the development of a taxonomy for institutional report cards for higher educational institutions. 98% of institutions offered some type of transparency or data reporting related to student learning, with 89.3% offering some type of institutional report card, performance indicators, score card, dashboard, or student achievement reporting for consumers. At an average of 8.12 documents, state colleges and universities averaged the highest number of documents and webpages devoted to transparency reporting. Carnegie-class research institutions and state colleges and universities most consistently deployed a single office, typically named as an Office of Institutional Research to disseminate findings 64.7% of the time.

Keywords: institutional report card, accountability indicators, institutional transparency

INTRODUCTION

Institutional report cards are increasingly being used by higher educational institutions to present academic outcomes to external audiences of prospective students and parents, as well as program and institutional evaluators. While systems such as the Voluntary System of Accountability (VSA), the Integrated Postsecondary Education Data System (IPEDS), and University and College Accountability Network (U-CAN) have reached critical mass participation levels in order to provide comparative information for stakeholders in a standardized format, criticisms continue about the voluntary participation of its membership and lack of information regarding student experiences, student future plans, and learning outcomes. In addition, incomplete data sets and aggregated or collapsed data points as well as the lack of student progress or value-added features such as score percentiles, rankings, and recommendations, restricts system value for consumers. While some prospective students are served by national transparency measures such as VSA's College Portrait® and IPEDS' College Navigator®, most users mine information from an institutional web site, so even institutions at the bottom of the comparison spectrum need to manage their information dissemination to fulfill audience needs. An analysis of the Web-published institutional report cards and transparency reports of a representative sample, stratified by institutional type and geographic location, of 82 American higher educational institutions yielded results which influenced the development of a taxonomy of institutional report cards for higher educational institutions.

The growth in the deployment of institutional report cards, confirmed by this study, seems to parallel recent legislation of the Every Student Success Act (P.L. 114-95, 2015), including reform to a more state-wide centered transparency initiative in which each state develops its own

standards. Institutional report cards may offer consumers the strongest evidence that a particular institution is effective in addressing its growth and community impact; its reflection of the demographic characteristics of the college district; and that measures taken to improve student success, instructional quality, and satisfaction rates have been effective. With data from these report cards increasingly being reported to state workforce investment boards and department of education structures for inclusion in performance evaluation funding awards, evidence is increasing that taxpayers and lawmakers are increasingly making value judgements about the educational quality reflected in the data.

The current study emerges from a need to better quantify and qualify what good learning and instructional settings mean for consumers of higher educational products. Pressures from various stakeholder voices, including taxpayers, accreditation agencies, and student participants increasingly taking on proactive change in a spectrum from legislative action to student protest. Therefore, the need for transparency and meaningfulness of system data, particularly when linked to funding, has never been greater, yet literature in this field is not well-developed, perhaps because accountability stakeholders are tied to political processes. Increasingly, literature is recognizing that educational accountability, performance and support requires a coordinated effort of key stakeholder groups: state departments of education to collect data and evaluate performance of districts to form state benchmarks; accrediting bodies, for setting accreditation standards and directing local school boards regarding implementation plans; state boards for accrediting schools and overseeing academic programs; and institution leaders who create, adopt, implement, and evaluate plans.

LITERATURE REVIEW

The use of performance reporting has been linked to positive association and trust (Grosso & Van Ryzin 2011), allows trend performance to be analyzed (Gajewski, Mahnken & Dunton 2008), and is theorized to reduce corruption if accountability measures and electoral mechanisms are in place (Schatz 2013). With field research recognizing the alignment of management frameworks to performance reports such as budgets, expenses, annual reports, performance reports, and performance benchmarking, there is a need for institutions of higher education to move from static data systems to value-added systems that analyze data in light of dashboards, outcomes, or stated goals. In fact, Offenstein, Moore, and Shulock (2010) recommended the use of milestones and on-track indicators to monitor degree completion and serve as a decision making tool for designing interventions. However, report card systems have their critics; in a report on the use of educational accountability systems in the United States, Means, Padilla, and Gallagher (2010) noted that less than half of the school districts can combine data from different systems and report on outcomes; while higher educational management systems are increasingly integrating campus databases, the wealth of database vendors in higher educational settings is indicative of similar integration issues. Due to stakeholder confusion of the dual state and federal reporting systems, South Carolina revised its performance reporting system to better include stakeholder input (South Carolina Legislative Services Agency 2015). Even a report sponsored by the National Center for Public Policy in Higher Education noted the lack of generalizability when comparing regional data mined from report cards (Swail, Jaeschke & Rasmussen 2009). More concerning is that research into the effectiveness of adopting performance-based measures to improve institutional performance is mixed, with Martinez and Nilson (2006) finding positive correlations and Shin (2009), Volkwein and Tandberg (2008) finding no relationship. While Hillman, Tanberg, and Gross (2014) found modest gains in a performance funding model compared to neighboring states, a systematic comparison found that the performance funding model was ineffective for increasing college completions. In fact, Jacobsen, Snyder, and Saultz (2014) concluded that the effectiveness of report cards is mixed with greater transparency

either contributing to or diminishing legitimacy and support with format being a considerable factor in perception.

Report Cards

The use of a national report card system has seen an ebb and flow in American higher education, from a high-water mark in 2008 with the mandating of state Measuring Up report cards to the current system of annual reports with a focus on institutional reporting (Ginder, Kelly-Reid & Mann 2015). While all states are employing accountability systems, with annual reports as de-facto report cards; in general, while the data is comprehensive, it is not provided in an aggregated format conducive for providing a quick summary and rankings as a report card (Djurovich, et al. 2015; New Mexico Higher Education Department 2013; Oklahoma State Regents of Higher Education 2015; State Council of Higher Education for Virginia 2015; State of Connecticut Board of Regents for Higher Education 2015; State of New Jersey Office of Research and Accountability Student Unit Record 2015; Texas Higher Education Accountability System 2015; West Virginia Higher Education Policy Commission and Community and Technical College System of West Virginia 2014; Wyoming Community College Commission 2010). Even states presenting a Quick Facts or Facts at a Glance PDF or web page are still formatting data in aggregate groups with an average of 48 facts per publication in this literature review sample (Colorado Commission on Higher Education 2015; Florida College System Research & Analytics 2015; Kentucky Council on Postsecondary Education 2015; Mississippi Institutions of Higher Learning, Office of Strategic Data Management 2015). While the Education Trust of the National Association of System Heads (NASH) provides benchmark reports of 22 American higher education systems as part of its Access to Success Initiative (Engle, Yeado, Brusi & Cruz 2012), data for non-participating states must be viewed in isolation. Independent projects such as the Young Invincibles' State Report Cards (2015) have stepped in to fill the void, however, the reliability of privately-sponsored datasets is a barrier for decision-making.

Performance Metrics

In order to determine how to classify groups of indicators for the coding form employed in this study, a representative sample of state and national performance reporting frameworks for higher education were explored for consideration in this study (Alabama Commission on Higher Education 2015; California Postsecondary Education Commission 2015; Colorado Commission on Higher Education 2015; Connecticut Board of Regents for Higher Education 2015; Kansas Board of Regents 2015; Minnesota Office of Higher Education 2015; Wyoming Community College Commission 2010). These indicator groups helped identify report card trends and key metrics used in this study.

Performance Funding

The linkage of performance reporting systems and funding is clearly stated in a representative sample state-based systems (Mississippi Institutions of Higher Learning 2015; Nevada System of Higher Education 2015; Pennsylvania State System of Higher Education 2011; Tennessee Higher Education Commission 2015; Utah Foundation 2014); in general, stakeholders want to link funding to performance in an effort to force positive, data-based change typically in areas of access, minority student success rates, financial efficiency and workforce needs (Dougherty, Natow, Hare, Jones & Vega 2011). However, the impact of performance funding in higher education is mixed; despite early positive reports of performance funding for facilitating standards-based implementation and accreditation processes, (Williams 2005), recent literature paints a more critical picture. Dougherty and Reddy (2011) literature review comparing studies on institutional-level funding had a common finding that awards amount were small, but effectiveness ranged from either low impact or service as an additional revenue fund, to serious,

substantial changes. A policy brief by the Columbia University Community College Research Center (2014) noted that while performance funding has led to institutional changes, it has not been linked to increased resource allocation nor increased retention and graduation rates. Dougherty, Natow, Hare, Jones, and Vega's (2011) literature review findings are even bleaker, with only half of U.S. states adopting performance funding models and more than half of those either abandoning the effort or substantially changing the model. It is reasonable to assume that reporting structures will continue to be in flux while the funding that supports them continues to be responsive to political and economic variables and trends.

By comparing how institutions treat instructional objectives and learning outcomes, the presented study appears to offer a unique framework not often encountered in transparency literature; a skewed emphasis on the importance on learning outcomes is clearly noted in recent literature (Prøtz, 2015); in fact, Wittman-Price and Fasolka (2010) argue that this practice, while well-aligned for promoting quality improvement mask the need for change. This study's equal emphasis on objectives and outcomes allows for different expressions of educational paradigms to weigh into analytic comparison.

METHOD

Study design, population, and sampling procedure

A cross-sectional content analysis of transparency reports offered by 82 colleges and universities in the United States was employed and categorized into: 17 Carnegie class research-emphasis public universities, 19 state colleges or universities, 22 community colleges, and 24 private colleges or universities; differences in the size of the four categories occurred to achieve a valid, representative sample size. Stratified sampling procedure was adopted in selecting the representative institutions in order to reflect the findings of Gordon and Fischer (2008) who noted a relationship between informational disclosure and institutional factors such as size and type. Data was collected by analyzing institutional research, institutional effectiveness, as well as home page entries hosted for the purposes of factual comparison. The selection of institutions dynamically influenced the coding tool in that every potential finding of a pilot group was considered for inclusion in the developing coding tool. This method of coding has been shown to enable researchers to examine datasets in a systematic fashion to determine focus (Weber 1990). It also allows inferences to be made which can then be corroborated using other methods of data collection. Data was coded based on the title of represented data, so data represented as "Quick Facts" was coded as such. Data without a representative title was coded based on an analysis of data, so data of a more promotional variety, including rankings was coded as a promotional fact book. In cases where the same title was used for two different documents or web pages, the data was analyzed to determine correct placement, again using features such as rankings or performance measures to indicate placement. Since some data appeared in multiple locations, the accessibility of the data was considered the primary factor, so data listed in a prominent homepage position was coded over data that could only be obtained after multiple clicks.

In regards to coding individual metrics, literature review findings indicated a good potential for disaggregation of metrics, however, with metric trends identified from the literature review, this study grouped metrics to their identification of goals, standards, and benchmarks for student success, objectives, criteria and measures for demonstrating institutional and unit (program) quality, identification of student-based factors, and measures of satisfaction as the primary grouping mechanisms.

Data collection methods and research tools

The framework for transparency reporting used in this study was developed using as a hybrid of inputs including: recommendation from field literature investigated in the study literature review; standards and guidelines from: Association of Institutional Research and its affiliates, the American Educational Research Association, the American Council on Education, and the Council for Higher Education and its regional accrediting bodies; and data collected via a coding spreadsheet from the pilot institutions of study which included data collected from relevant reporting and transparency documents including: report cards, factbooks, quick facts, promotional factbooks, surveys, impact studies, campus and student profiles, and assessment data. Due to the focus of this study on student achievement, other transparency reports and metrics such as crime, fire, and environmental reports were found, but not included in this study. Since the focus of this study was transparency reporting, data that required a login or password was not included in the study.

The placement of data was considered of primary importance due to eye-tracking studies suggesting that website information consumers prefer a limited number of information points (Djamasbi, Siegel, Skorinko, & Tullis 2011). Therefore, the first five entries of each transparency report were mined for inclusion in the coding tool. Since the pilot study resulted in the development of a robust coding tool, in cases where data subsets beyond the coding category were included, a determination of inclusion of a new category was met only if the resultant data could be considered a new aspect or perspective. When multiple datasets were provided, the latest dataset was studied.

Data analysis

Quantitative data on 65 indicators was input into SPSS® for statistical coding and analysis to obtain simple descriptive uni-variate statistics to draw inferences and comparisons of the representatives of each of the four (4) categories of studied institutions. During coding, the data was classified, sorted and tabulated for easier comparison and inference. Document analysis of the curricula was done using a framework that heavily anchored identified knowledge areas and matched it against the sample knowledge areas to establish best fit.

Reliability and validity of data collected

Internal validity was achieved through controlling internal and external influences i.e. proper orientation of research assistants; as noted by Erlandson, Harris, Skipper, and Allen (1993), this triangulation method lends credibility to the findings by incorporating multiple sources of data, methods, and investigators. Similarly, external validity was achieved by following correct, unbiased sampling procedures and using a representative sample size of at least 20%. In this study, data validity was ensured by collecting data from reliable sources of institutional office web pages, using basic questions as identified in the related literature review, and pre-testing the questionnaire for meanings.

RESULTS

Due to the variety of institutional reports, web pages, PDFs and fact sheets presented on web communication channels, this study aggregated the data presentation by type, with the following definitions: Report Cards offered some type of performance management; in addition, it was clear that some report cards were being used to provide transparency for evaluation bodies and justification of expenditures to stakeholders, due to findings of state and local economic impact or analysis of impact on workforce development. Factbooks also are used to address transparency, however, career guidance and promotional aims were also found in the sample as evidenced by degree completion, placement rates, and licensure pass rates. Quickbooks generally took on a

promotional tone, however, transparency of data and career guidance were also found in the sample, particularly for high-interest field areas, such as STEM fields. Promotional reports were typically found in general areas off the institutional home page or an admissions site. Surveys and student profiles would most often be listed separately under the sponsorship of Institutional Research or Institutional Effectiveness Offices. Of the 82 studied colleges and universities, only one institution, a private institution, did not offer any type of transparency or data reporting in any category. It should be noted that across institutions, there was a consistent finding of confusion about the use of headcount and enrollment, with a frequent finding of the terms used interchangeably. For this study, headcount serves as a single figure in a category, while enrollment indicates a breakout of a population into identifiable groups.

At an average of 8.12 documents, state colleges and universities averaged the highest number of documents and webpages devoted to transparency reporting. An average of 7.28 documents or web pages provided transparency data at Carnegie class research institutions. 64.7% of Carnegie-class research institutions and state colleges and universities employed an Office of Institutional Research to disseminate findings, with 29.4% of research institutions deploying an institutional planning office to perform transparency functions. For community colleges, an average of 6.375 documents or web pages was devoted to reporting; private institutions offered an average of 4.75 documents of webpages. The largest group of community colleges, 43.75%, hosted reports by an institutional research office, 31.25% of institutions did not indicate data sponsorship, and 25% were hosted by an institutional effectiveness office. For private institutions, 47% hosted reports by an institutional research office while 23.5% did not provide an indication of data sponsorship.

Report Cards

89.3% of studied institutions offered some type of institutional report card, performance indicators, score card, dashboard, or student achievement reporting for consumers. Results were evenly distributed among the research, community college and private institutions, with all but one of the state-level colleges and universities providing some type of internal assessment. 26.4% of institutions employed an external site to disseminate all or part of their performance-related information, with 66.6% of those employing the Integrated Postsecondary Education Data System's (IPEDS) College Navigator® project. The Voluntary System of Accountability's (VSA) College Portrait® project was deployed by 27.7% of institutions employing an external link. The Student Achievement Measure® (SAM), sponsored by a higher education consortium, is linked to by the final significance category by 16.6% of link-employing institutions.

Enrollment and admission trends were the most significant reporting categories for report cards of Carnegie-class research institutions. Economic impact on local areas, retention and graduation rates and aggregates, institutional rankings, and value-added analysis of improvement or comparison benchmarks rounded out the other categories of significance with 17.6% of institutions participating in each. Only enrollment trends at 23.5% and to a lesser extent, graduate student participation and value-added analysis of improvement or comparison benchmarks at 17.6% were significant findings for state colleges and universities. For community colleges, enrollment trends, retention and/or persistence rate, and credit hours and/or course completion were equally reported at 37.5% of community colleges. Information on graduation or completion rates, including to a lesser extent, aggregates on cohorts, freshmen, and transfer students, saw the second highest reporting rate of 25%. Finally, number of degrees awarded, and to a lesser extent, category aggregates, along with reports on transfer students, and the economic impact on local areas served rounded out the final category of significance at 18.75%. 18.75% of community colleges presented data in the form of a dashboard indicating alignment to goal attainment.

For private institutions, graduation or completion rates were the most reported data items at 29.4% of institutions. 23.5% of private institutions presented data related to placement rates. Retention rates, credit hours and/or course completion, and athletic participation were equally represented in the final tier of significant participation with 17.6% of institutions providing information.

Factbooks

76.4% of research level public institutions provide enrollment data in factbooks, followed by 47% providing admissions data such as number applied, admitted, enrolled as well as aggregate data for freshmen and transfer students. 35.2% of research-level factbooks provided headcount information. Similar percentages were found for the provision of state colleges and universities enrollment data in factbooks at 82.3%. Faculty and staff data (51%) and retention data (41.1%) were also significant findings for this category. For community colleges, enrollment (29.4%), student characteristics or profile (23.5%), and credit hours and aggregates such as class, schedule, instructional method and subject, tied with institutional information including history, logo, alma mater, president, organizational chart, type, calendar, mission and vision (17.6%) served as areas of significance in publicly posted factbooks. Participation is stronger for private institutions, with 35.2% including enrollment information, 29.4% each for headcount and faculty and staff information and aggregates, and 23.5% each for costs and financial aid information and number and type of academic programs.

Fast Facts\Quick Facts\At a Glance

Typically located off the institutional homepage's About Us menu, this subset of factual data is meant to be quickly absorbed by the consumer. Headcount, the leading indicator across institutional type for this category and enrollment data and aggregates were the most significant inclusion (53%) in fast facts for Carnegie-class research institutions. At 29.4%, institutional data including president, leadership, address, and location; and founding date as well as facilities, buildings, and grounds were slightly more significant than the categories of credit hours, accreditation information including faculty degrees, and student profiles or characteristics (23.5%). Headcount (41.1%); followed by admissions data and institutional information such as president, leadership, address, and location; and founding date (29.4%), and number and aggregates for degrees awarded (23.5%) make up the state colleges and university category for fast facts. For community colleges, headcount (53%) followed by credit hours and student profile or demographics (29.4% each) and cost (23.5%) are the most significant categories. Headcount, student/faculty ratio or class size, and student profile or demographics (35.3%) were the most significant categories for private institutions, followed by enrollment, admissions data, and institutional information such as president, leadership, address, and location; and founding date (29.4%). Number of academic programs was the last significant category for this type of institution (23.5%).

Promotional Facts

Typically titled By the Numbers, Facts and Rankings, Did You Know? or Pride Points, two categories of institutions, research-level institutions and state colleges and universities had significant findings for promotional facts that are typically located in a prominent location of the main menu in either the About Us or targeted admission page. Institutional rankings (41.1%), followed by the number of institutional scholars, fellows, Nobel prizes, and/or important faculty, alumni, and programs tied with institutional headcount as significant for Carnegie-class research institutions. State colleges and universities only had significant findings for headcount (29.4%) and number of academic programs (23.5%) in this category.

Student Profiles or Demographics

While several schools presented data in this area, community colleges had the most significant findings with 64.7% presenting gender data about students, 47% presenting ethnicity information, and 35.3% providing age and full/part time student status. 29.4% of research level institutions presented data concerning headcounts and degree-seeking student aggregates.

Diversity reports

Of school categories that presented data in this area, only Carnegie-class research institutions presented significant data in the form of 23.5% of institutions providing student enrollment and faculty and staff percentages for this category.

Survey data

For Carnegie-class research institutions, 35.3% of schools provided student satisfaction data, usually in the form of a National Survey of Student Engagement (NSSE) report. Senior or graduating students; faculty, staff, or employee; and alumni surveys and data, followed by graduate student and campus climate surveys were also significant findings for research institutions in this category. National Survey of Student Engagement (NSSE) reports (47%); followed by senior or graduating student surveys (35.3%); and faculty, staff, and employee and alumni survey and data (23.5%) rounds out the significant findings for this category. 23.5% of private institutions provided survey data regarding seniors or recent graduates.

DISCUSSION

While only a small number of institutions provided results in the form of a dashboard, field evidence exists that dashboard presentation of data may be poised for greater deployment since 53.7% of a 467 Association of Institutional Research (AIR) member population admitted to managing at least one dashboard (Association of Institutional Research 2013). In fact, Reindle and Reyna (2011) list efficiency and effectiveness metrics including meeting workplace needs, student output relative to input, return on investment, and quality of student learning as the most important factors to boost productivity and the second most important type of metric for gauging performance and targeting improvement areas. Reyna (2010) included a category of “progress metrics” including remedial enrollment and success, credit accumulation, first-year success, as well as retention rates and course completion as important for policymakers and interventions requiring budgetary support.

While the majority of institutions seem to be aware of the importance of reporting graduation and retention rates and placement or employment information, the Association of the Study of Higher Education (2013), coined a category of “ultimate student outcomes” to represent aggregate retention reports, remedial coursework and credit hour reporting, and college readiness dashboards. This study confirms that a growing number of institutions are either responding to performing funding policies to address equity or are following field recommendations (Jones 2014; Offenstein, Moore & Shulock 2010; Offenstein & Shulock 2010) to provide transparency in order to increase understanding of student representation groups. While a significant number of institutions were found to present degree production, graduation and retention rates, high-demand degree production was rarely reported in this study’s sample and excess credit production was not reported by any institutions; both of these measures were recommended by the Washington Higher Education Coordinating Board (2011).

The relatively high degree of financial reporting of incomes, revenues, costs, and expenses may be influenced by calls to use of performance metrics to justify institutional allocations (Reindle & Reyna 2011). However, while a significant number of institutions report on costs, revenues, and expenditures, few of the studied institutions are heeding the California Postsecondary Education Commission's (2008) call to include affordability as a report card item. In fact, an unexpected finding of this study is the low availability of progress or value-added metrics displayed in the studied sample. In a focus group on standards and expectations to improve accountability, Wills, et al. (2010) confirmed the value that stakeholders place on progress metrics as that study sample rejected simplistic ratings in favor of metrics that recognized social conditions, and included expectations for closing achievement gaps.

The studied sample presented several concerns about the presentation of the data itself. Due to recommendations about leaving a primary site to visit a secondary site, the 17.6% of institutions employing an external site to present their own outcomes in a primary manner are not heeding data dissemination best practices of web developers (Mackey 2002). Another concern is the use of the Common Data Set template to communicate primary information given that the template reads as a report from the institution to the agency, rather than to an audience. Users would need to understand the template framework to navigate to requested information, a standard not recognized by the Cooperative Education Data Collection and Reporting (CEDCAR) Standards Project Task Force (Bayless et al. 1991).

The prominent finding of historical information in Factbooks and QuickFacts, such as founding date may serve as an introduction to facts rather than an abrupt transition. Confusing the whole point of transparency, the elevation of promotion-oriented facts, such as rankings may serve to obscure more important facts such as graduation and retention rates, some of which were only available via the Institutional Research page in the current sample. In fact, Locke (2014) argued that higher education's marketing of rankings has become a substitute for more authentic data.

Due to the impact that federal financial aid has on enrollment and completion, Reimherr, Harmon, Strawn, and Choitz's (2013) recommendation for the inclusion of program and student outcome metrics, such as participation and progress in remedial education, completion of checkpoint courses, and credential program persistence and completion, incentive the serving of at-risk students. In this study, the reporting of the number of Pell grant recipients, and the establishment of diversity reports may support incentives for serving at-risk students. In fact, Reyna (2010) reported low-income and remedial students as the largest categories of students overlooked by federal aggregated data groups, which has implications for state and federal policies and spending on time-to-degree and remedial interventions. In a related area, Fabricant (2014) recommends the use of "austerity metrics" such as number of students enrolled part-time due to financial constraints and time-to-completion rates, in addition to tuition costs in order to better understand how the higher education cuts and tuition privatization has impacted middle and lower class families. Finally, the institutions of this study are not heeding field literature suggestions (Burke, Hedrick, Ouelette, & Thompson, 2008) for incorporating metrics related to individuals with disabilities in order to explore issues and data unique to this population and foster a more inclusive environment; in fact reporting on enrollment, retention or completion did not appear as a significant aggregate for any of the studied metrics.

While not a significant finding, the number of institutions reporting transfer out rates and student progress in terms of achieved credit benchmarks seems to reflect recent recommendations (Jones 2014) to reconsider the utility of commonly used metrics in order to better quantify the increasingly common phenomena of attendance at multiple institutions.

Recommended Taxonomy

Based on study findings, a description of recommended category findings of performance indicators is provided below:

- a) Student and participation indicators (number of enrolled students; credit hour load of students enrollment aggregates including sex, ethnicity, resident, age, education level);
- b) Staff and leadership indicators (number of employees; employee aggregates including percentage of faculty types, faculty degree qualifications; percentage change in number of administrators; salaries);
- c) Financial, cost, affordability indicators (operating income, revenue and expenses and aggregates; salaries and costs as a proportion of total expenditure; costs per relevant student groups; revenues from research; cost aggregates (per credit, cost to graduation) and affordability aggregates (by institution, compared to benchmarks);
- d) Research indicators (share of research student groups; revenues from research generated by students in postgraduate studies; revenues from research per researcher; research production and quality indicators (number of publications, national and international presentations);
- e) Program, quality, outcome, learning and success indicators (number of accreditations, number and quality of reviews; rankings, number of licensures and certifications; rate of progression of students; value added success, field test scores and percent pass rates);
- f) Access and diversity indicators (number of initiative or funding support for diversity initiatives, percent of income for family burden, percent of Pell-grant recipients, enrollment aggregates);
- g) Preparation and college readiness indicators (means for SATVACT scores, high school GPA, rank in high school, percent needing remediation, progression in remediation, number of ESL, parent educational level);
- h) Persistence indicators (retention and transfer out rates, cohort rates, indications of reasons for leaving);
- i) Completion indications (number of graduates and completers for 100% and 150%, aggregates by program);
- e) Workforce development\area impact\employment indicators (placement rates, graduates employed full-time, graduates who continue their regular studies, the average wages of graduates; impact on local and state economy, number of STEM and high need graduates, pipeline analysis).

CONCLUSION

Criteria emerging from study indicate that institutional transparency reports are increasingly serving a variety of purposes including transparency, career guidance, promotional, performance management, and evaluation and justification to stakeholders, yet, with the exception of promotional report cards, audience considerations do not appear to be a consideration of many report cards with large volumes of data dumped without definitions or context provided for the reader; findings which go against the primary recommendation of field literature for consideration of audience in performance reporting (Wiggins, 1994). Findings of significant measures indicate that institutions value the clear communication of achievement and progress over time, but may not be providing accurate descriptions of learning or achievement of identified learning objectives. Too often, results are not standard-referenced or benchmarked against meaningful comparison groups. Our study joins other field literature in calling for a weighing of evidence of existing performance-based funding policies; however, for states still considering this model, a consideration of Klein's (2015) seven steps to develop a formula for performance-based funding due to its linkages of state commitment and funding priorities to implementation. In addition, states should keep Miao's (2012) study of best practices of performance-based funding in mind due to its considerations of different funding for different settings, model consideration of budget cuts and funding constraints, stop-loss provisions, and implementation transition period.

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